REPORT OF COMMITTEE ON FLORAL AREAS.

(*Continued from page 185.*)

Halophytic Species.

Ranunculus Cymbalaria follows the sea shore, thriving in salt marshes and on brackish shores. It is less frequent southward, with only three stations known on the Connecticut sea-coast.

Coastal Species.

Ranunculus laxicaulis and *R. sceleratus* are mainly coastal in our area, but not halophytic, seeking out clayey streams and pools; the former running east to Deer Isle, the latter to Brunswick, Me. Both follow the lower Connecticut river inland, the former to Alstead, N. H. There is a lone station for *R. sceleratus* at Sheffield, Mass., on the Housatonic. It also occurs near Lake Champlain at Colchester and Burlington, Vt. (Mrs. N. F. Flynn).

Northern Species.

Ranunculus	pennsylvanicus	Ranunculus	septentrionalis
"	reptans	"	abortivus, var. eucyclus

These plants avoid southeastern New England entirely, but have scattered stations in other parts of Massachusetts and Connecticut.

Southern Species of Dry Soils.

Anemone	cylindrica	Hepatica	americana
"	virginiana	Ranunculus	hispidus
Anemonella	thalictroides	Thalictrum	dioicum
Aquilegia	canadensis	"	revolutum

Anemonella thalictroides, *Ranunculus hispidus* and *Thalictrum revolutum* are limited to southern New England, while the other species

range north to central Maine. *Hepatica americana* also grows in Nova Scotia.

CALCIPHILE SPECIES.

Northern	Anemone canadensis
	" multifida, var. Hudsoniana
	" parviflora
	" riparia
	Clematis verticillaris
	Thalictrum confine
Alleghenian	Hepatica acutiloba
	Ranunculus allegheniensis
Southern Trap-rock	Ranunculus fascicularis
	" micranthus

The calciphiles are very interesting, from the closeness with which they follow the calcareous rocks. They seem to depend on lime in the soil. The northern group contains species abundant north and west of New England. *Clematis verticillaris* is the most generally distributed of these, for it does not depend entirely on substrata for its lime, but finds it sometimes in rich humus on other rocks, as on quartzite at Killingly, Conn.[1] *Anemone riparia* seems to have sought out calcareous areas throughout, although especially abundant in Aroostook County and western Vermont. *A. canadensis* is abundant in the alluvium of the St. John and Penobscot valleys in Maine, in the Champlain region and in the Housatonic valley. The stations in eastern Massachusetts seem to be introduced.

Thalictrum confine, discovered at Van Buren, Ft. Fairfield and Caribou, Maine, by Prof. M. L. Fernald, has also been found on ledges along Lake Champlain, from Ferrisburg to North Hero. *Anemone multifida*, var. *hudsoniana* grows in ledges of the St. John River at St. Francis and by the Fish River at Fort Kent, and at Aroostook Falls in New Brunswick. This was also found by Robbins and others in the

[1] An old report in Archives of Science, vol. 1, no. 5 (1872) by G. H. Perkins, gives a record of *C. Viorna* from Wantasket Mt., N. H., by C. C. Frost. Undoubtedly this was *C. verticillaris*,

gorge of the Winooski River in Colchester, Vt., also at Highgate Springs, Vt. (Jesup). *A. parviflora* is not represented by any specimens from New England. It was reported by Dr. George L. Goodale (Ag. & Geol. of Me. 366, 1861) "along the shore on a wet soil especially in wet and disintegrating slates" and in Ag. & Geol. of Me. 125, 1862 "abundant along the main river in the disintegrating slates." The context shows that Goodale was exploring the main St. John River from Ft. Kent to Seven Islands, a region little visited by botanists since that time. As Prof. Fernald says in litt. "the habitat, wet disintegrating slate, is exactly the habitat of *A. parviflora* on the Restigouche River, just east of the St. John and through the Gaspé and Newfoundland calcareous regions."

Hepatica acutiloba is very abundant in moist calcareous regions of Vermont, Franklin and Berkshire counties, Mass., and Litchfield County, Conn. It is known at Lancaster, N. H., and Alstead, N. H., and is reported as rare by Batchelder in the vicinity of Manchester (Proc. Manchester Inst. Arts & Sci. IV. ii. 24, 1909. This report needs confirmation by specimens). Curiously enough, Eugene P. Bicknell found a lone station for this in August, 1896, at York, Me., "one luxuriant cluster in rich deciduous woods near the York River, about one mile above the railroad bridge." This is more common in the moist calcareous regions of the Green Mts. than in the drier Taconic Range. Sometimes it occurs on trap rock, as at Simsbury, Conn. This plant ranges south to Georgia along the mountains, also west to Minnesota. It has thus a typical Alleghenian range.

Ranunculus alleghenicnsis has the range its name suggests, but is likewise abundant in dry diorite areas around Boston and has been found in moist soil on Assonet Neck in Berkeley, Mass., and at Lincoln, R. I., by S. N. F. Sanford. Northward it is known only from West Lebanon, N. H. (Dr. G. G. Kennedy), Smugglers Notch, Vt. (E. F. Williams), and West Haven, Vt. (George L. Kirk).

Ranunculus micranthus and *R. fascicularis* seem to prefer dry trap rock. The former is occasional around Boston, has one station in Hampden Co., Mass., appears at Limerock, R. I., and along the trap ridges of central and western Connecticut. *R. fascicularis* grows in the vicinity of Boston, especially over diorite, is frequent in the Connecticut valley in Massachusetts, and occurs at scattered localities in the western half of Connecticut, with an isolated station at Franklin. In Vermont it has been collected at Snake Mt., Weybridge

(E. Brainerd). There are old printed records, with no specimens, from Burlington, Norwich and Brattleboro, and it is also in Jesup's Hanover list.

MISCELLANEOUS SPECIES.

Caltha palustris
Cimicifuga racemosa
Hydrastis canadensis
Ranunculus delphinifolius
Ranunculus longirostris
" Purshii
" reptans, var. ovalis
Thalictrum dasycarpum
Trollius laxus

These plants seem not to fall definitely into any of the above groups, nor can they, with the data at hand, be placed altogether satisfactorily in groups of their own.

Caltha palustris has the most perplexing range of any species in the family. It is very abundant in wet, mucky woods and meadows in southern New England, follows up the Merrimac to Concord, N. H., and occurs also along the coast as far as southeastern Maine. Elsewhere it seems to be largely a plant of heavy clay soils in calcareous areas. It is especially abundant in Aroostook county and the Piscataquis valley (M. L. Fernald), with scattered stations at Orono and Skowhegan in central Maine. It is also in northern Coös county, N. H. (A. S. Pease), at Hanover, N. H. (G. G. Kennedy) and in calcareous regions of Vermont. It is abundant at an elevation of 2000 ft. in a spruce swamp at Walden, Vt., but seems to avoid the higher mountainous regions.

Cimicifuga racemosa finds its natural eastern limit in southwestern Connecticut. Other stations appear to be introduced. It belongs to a small group of plants, represented by *Liquidambar Styraciflua* and *Heuchera americana*, of coastal plain or Alleghenian range which touch New England only at its southwestern corner. They should perhaps be classified with the "Southern species of dry soils" but are noteworthy because their range in our region is so limited.

Hydrastis canadensis has been found only at Shelburne, Vt. (F. H. Horsford), Weybridge, Vt. (W. W. Eggleston), Plainville, Conn. (J. N. Bishop), and at the base of Meriden Mt., Southington, Conn. (Mrs. E. R. Newell). *Trollius laxus* has a more limited range and in

New England has been found only in northwestern Connecticut. Mr. E. E. Brewster found it in a swampy meadow at 1100 feet elevation in Cornwall in 1879, and it also occurs in a swampy wood-margin in Canaan. Both of the foregoing are species of the northeastern Mississippi basin east of the prairie and the adjacent Alleghenian region, and just reach western New England. They are not, perhaps, strictly calciphiles but our stations for them are in more or less calcareous districts.

Ranunculus longirostris is rare in Vermont and local at Salisbury, Conn. Its New England range is thus similar to that of the two preceding species, but according to the manuals, its general range is much more extended.

Ranunculus delphinifolius is a water plant with scattered stations, not reported from the northern half of Maine and New Hampshire, southern Vermont and Cape Cod. More reports are needed for conclusions.

R. Purshii was discovered by Prof. M. L. Fernald at New Limerick, Aroostook county, Me., and later at Phair in the same region by C. H. Bissell and R. W. Woodward. These are evidently southern limits of a circumpolar species. *R. reptans*, var. *ovalis* is more southerly than the species in its range, but not enough specimens are available for generalization.

Thalictrum dasycarpum is known only in southeastern Connecticut at Franklin (R. W. Woodward) and at Groton (C. B. Graves). The specimen from Milton, Mass., quoted in Rhodora xviii. 168, 1916 was incorrectly determined.

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CARDAMINE OLIGOSPERMA AND ITS NEAR ALLIES.

Wilhelm Suksdorf.

In Mr. G. S. Torrey's article "The Varieties of Cardamine oligosperma" (Rhodora 17 p. 156, 1915) my notes on *C. oligosperma* and related forms were quoted. Since that time I have been able to make some further examinations and still believe that these forms should